

REMARKS

This paper is in response to the official action and of January 14, 2005, wherein claims 10, 11 and 17-19 were objected to and claims 1-9, 12-16, and 20 were finally rejected. In view of the foregoing amendments and the following arguments, reconsideration is requested.

The foregoing amendments should be entered, as there is good and sufficient reason why such amendments have not yet been presented. Specifically, it has only now become apparent that the examiner appears to accord no meaning to the claimed step of comparing the difference value to a threshold value during machine operation. Moreover, it has only now become apparent that the examiner is treating the term "disturbance" as indicative of inherent machine error such as lead screw error, as opposed to the types of failures or malfunctions as now specified by, for example, amended claim 1. When read in conjunction with the specification, one of skill in the art would readily recognize that "disturbance" is not the inherent pitch screw error addressed by Inoue. Accordingly, there exists good and sufficient reason why the present amendments were not earlier presented.

Claim 1 has been amended to positively recite, in part, the step of comparing the difference value (i.e., the difference between the direct measured position and the indirect measured position) to a prescribed threshold value during operation of the machine tool to determine the occurrence of a disturbance, with the disturbance indicated if the difference value exceeds the prescribed threshold value, and with the disturbance indicative of at least one of an error of the drive motor, an error of one or more of the transmission elements, or a collision between the moving machine part and an object.

By comparison, the disclosure of Inoue cannot anticipate claim 1 for a number of reasons. First, the Inoue system is not an operational technique carried out during operation

of the machine tool, but instead "[t]he memorizing operation is performed prior to a given machining operation." Col. 6, lines 23-25. Thus, the Inoue system cannot anticipate claim 1 for this reason alone.

Second, Inoue does not compare a difference value to a threshold value to indicate the occurrence of a disturbance. Instead, the system of Inoue is an error compensation technique that merely stores (memorizes) an inherent position error (or all of the positional errors ascertained during the calibration cycle) so that the machine controller can make an appropriate correction, with the corrections reflected in the "desired machining or contouring pattern" which is used during operation of the machine. Col. 5, lines 30-35. In sum, the reference is a known compensation technique that applies corrections to account for positional errors ascertained during the calibration cycle. Inoue stores the error. Inoue does not compare a measured error to a threshold value as claimed by claim 1. Inoue cannot anticipate claim 1.

Moreover, Inoue cannot be used, even in part, to support a proper *prima facie* case of obviousness. There simply would be no suggestion to discard the express teachings of the reference relating to storing positional errors so that a path correction can be created. Further, there simply cannot be any suggestion to perform a comparison of the difference value to a threshold value without impermissibly using applicants' disclosure as a template. Additionally, there can be no dispute that eliminating the eliminating the entire memorizing aspect of the reference would both completely change the principle of operation of the reference and would totally destroy the operability of the reference. Accordingly, there can be no suggestion to make any of the needed modifications. See MPEP Section 2143.01 (Eighth Edition, page 2100-127).

Finally, the "error factors" ascertained by Inoue cannot possibly be considered as a "disturbance indicating at least one of a collision between the machine part and an

obstruction, an error of the drive motor or one of the transmission elements, or wear in ~~one of~~ the transmission elements" as claimed. In fact, nothing in the reference indicates in any way shape or form how such an "error factor" could be used to determine the occurrence of a "disturbance" as claimed. Nothing in Inoue indicates any of the possible errors or malfunctions as claimed. Instead, Inoue simply measures "error factors inherently present in the drive system" such as "error in the pitch or lead of the lead screw 13 and backlash of associated components." After Inoue determines the "error factors," the factors are "controlledly memorized and processed to provide a revision in the feed signal applied to each motor." Col. 5, lines 48-50. Inoue merely "memorizes" an error and creates a path correction based on the error. Inoue does nothing more. Inoue cannot anticipate claim 1, and Inoue cannot be used to establish a proper *prima facie* case of obviousness as the reference wholly fails to include all of the claim limitations.

For the foregoing reasons, claim 1 is in allowable. The claims dependent on claim 1 are also in allowable form.

Claim 12 has been amended to positively recite that the control unit is configured to compare determined position measured values to determine a difference value, and to determine whether the difference value is indicative of the occurrence of a disturbance. The occurrence of a disturbance is determined depending on whether the difference value fulfills a prescribed criterion. The control unit is configured to perform the comparison during operation of the machine tool, such that the occurrence of a disturbance is indicated upon fulfillment of the prescribed criterion. In

By comparison, as outlined above with respect to claim 1, the cited reference relates to a calibration cycle as opposed to a system in which the comparison of the difference value to a prescribed criterion is performed during operation of the machine tool. Accordingly,

Inoue cannot anticipate claim 12, and cannot support a proper *prima facie* case of obviousness.

Moreover, the cited reference ascertains a positional difference due to an inherent errors such as screw errors, and creates an appropriate compensation. At no point does the reference use any sort of difference value in order to compare that difference value to a prescribed criterion. The comparison of the difference value to a prescribed criterion is wholly missing from the cited reference, and therefore the reference cannot anticipate claim 12, nor can the cited reference be used to establish a proper *prima facie* case of obviousness, as a comparison step as claimed is completely missing from the reference. Accordingly, claim 12 is in allowable form, as are the claims dependent on claim 12.

Claim 20 has been amended to positively recite, in part, comparing the first and second position measurements during a machining operation to arrive at a position difference value, and using the position difference value to indicate the appearance of a disturbance with consideration of the actual operating conditions in the event the difference value exceeds a prescribed criterion.

By comparison, the cited reference is a pre-operational calibration system, as opposed to a system that operates during operation of the machine tool as claimed by claim 20. Moreover, the cited reference wholly fails to teach or even suggest using the position difference value to indicate the appearance of a disturbance with consideration of a full operating conditions in the event the difference value exceeds a prescribed criterion. This step is simply missing from the reference, and the examiner is not free to use the applicants' disclosure as a template to supply this missing limitation. Accordingly, claim 20 is in allowable form.

For all the foregoing reasons, all pending claims patentably define over the cited art,
and an indication to that effect is solicited.

Respectfully submitted,

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February 25, 2005

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